Grafting and Regeneration in Hydromedusæ. — An interesting series of experiments on grafting and regeneration of Hydromedusæ has been carried out by C. W. Hargitt.[1] Small pieces of vigorous hydroid stems were held together in different positions by slivers of lead and were thus readily grafted. The bells of Gonionemus were emarginated so as to check their spontaneous movements and were then held together in pairs in various positions by being strung on bristles. As a result of these experiments, it was found that pieces of hydroid stems united with one another with great freedom either orally or aborally, and thus gave evidence of no polarity. The success of the experiments was quite independent of the sexes of the individuals from which the parts came. While pieces from closely allied species could be intergrafted, material representing different genera did not respond successfully. The experiments on the medusæ showed that though these animals regenerated and grafted freely, aboral grafts were never successful, the animal thereby showing a marked polarity.

G. H. P.

Regeneration in Grafted Tissue. — As is well known, the tail of one species of tadpole may be grafted on the body of another, and the two parts in time form an effective union. If the two species used have characteristically different kinds of pigment, the fate of the tissues thus brought together can be easily followed. The grafted ectoderm eventually covers only the tip of the developing tail, whereas the grafted mesoderm forms a considerable part of that organ, *i.e.*, at the beginning of grafting, the grafted tissues are separated from the stock tissues by a single transverse plane; later the plane of separation between grafted ectoderm and stock ectoderm is much posterior to that between the two kinds of mesoderm. Grafted tails when cut off regenerate, and the results of this process have been studied by T. H. Morgan.[2] If cut transversely, the cut surface from which regeneration will take place may exhibit a face of ectoderm from the stock and of mesoderm from the graft. The grafted tail may be cut obliquely, so that the cut surface will exhibit stock and graft ectoderm and graft mesoderm. In all these cases the regenerated tails are composed of cells easily referable to their sources, and it may be concluded that in regeneration from a region

[1] Hargitt, C. W. Experimental Studies upon Hydromedusæ, *Biological Bulletin*, vol. i, No. 1, pp. 37–51. October, 1899.

[2] Morgan, T. H. Regeneration of Tissue Composed of Parts of Two Species, *Biological Bulletin*, vol. i, No. 1, pp. 7–14. October, 1899.

where the cells have been derived from two different species, the specific characters of the cells remain distinct. G. H. P.

Note. — No. 3 of Vol. XV of the *Journal of Morphology* contains: "Studies on the Maturation, Fertilization, and Cleavage of Thalassema and Zirphæa," by B. B. Griffin; "On the Blood-Plates of the Human Blood, with Notes on the Erythrocytes of Amphiuma and Necturus," by G. Eisen; "The Phosphorescent Organs in the Toadfish, Porichthys notatus Girard," by C. W. Green; "On the Species Clinostomum heterostomum," by W. G. MacCallum; and "Mitosis in Noctiluca miliaris and its Bearing on the Nuclear Relations of the Protozoa and Metazoa," by G. N. Calkins.

GEOLOGY.

The Absaroka Range of the Rocky Mountains. — In a presidential address before the Geological Society of Washington,[1] and in the Absaroka Folio of the United States Geological Survey,[2] Mr. Arnold Hague has presented the results of many years' field work in a region that contains for vulcanologists problems of extraordinary interest. The Absaroka Range forms the mountain barrier to the east of the Yellowstone plateau, and is composed chiefly of horizontally stratified volcanic flows and breccias thrown out from vents, the location of which is not marked by conical volcanoes or even by any positive trace which would show that such volcanoes existed. Thicknesses from two thousand to five thousand feet of these lavas are deeply trenched by streams draining the eastern face of a range which marks in a sense the eastern escarpment of the great plateau that forms the Yellowstone Park. Early breccia and basalt sheets overlaid by late breccias and basalts make up the mass of these lavas. The only interruptions to their horizontal continuity are massive bodies of intrusive rock that invaded the lavas at two distinct periods.

Evidence of the age of the lavas is derived from the contained plant remains and from the old topographies which underlie them. The accumulation of volcanic material rests unconformably on rocks

[1] Hague, Arnold. Early Tertiary Volcanoes of the Absaroka Range.

[2] Folio No. 52, *Geologic Atlas of the United States*, Crandall and Ishawooa Quadrangles. Washington, 1899.